

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization  
International Bureau



(43) International publication date  
4 August 2005 (04.08.2005)

PCT

(10) International publication number  
WO 2005/070567 A1

(51) International patent classification<sup>7</sup>:  
G01B 21/04

B07C 5/04,

Carl-Zeiss-Str. 22, 73447 Oberkochen (DE).

(21) International application number: PCT/EP2005/000439

(72) Inventors; and

(75) Inventors/Applicants (US only): GEORGI, Bernd [DE/DE]; Rudolf Kirchhoff Strasse 1, 73447 Oberkochen (DE). LOTZE, Andreas [DE/DE]; Rudolf-Mauersberger-Strasse 1, 01309 Dresden (DE).

(22) International filing date: 12 January 2005 (12.01.2005)

(25) Language of filing: German

(26) Language of publication: German

(74) Attorney: EFFERT, BRESSEL UND KOLLEGEN; Radickestr. 48, 12489 Berlin (DE).

(30) Data relating to the priority:  
10 2004 003 941.0 26 January 2004 (26.01.2004) DE

(81) Designated states (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU,

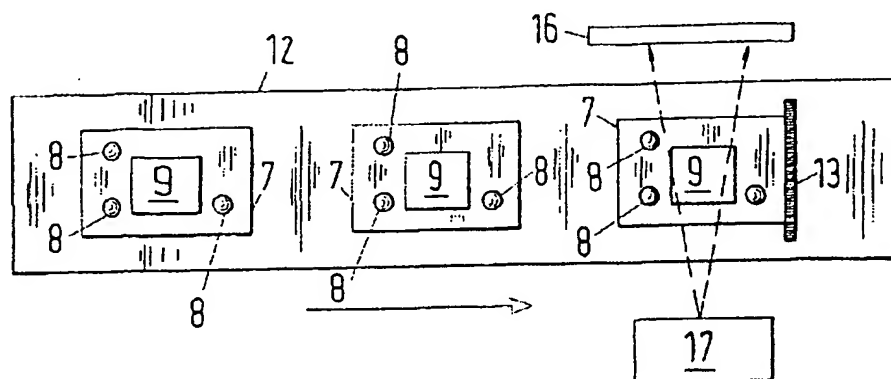
(71) Applicant (for all designated States except US): CARL ZEISS INDUSTRIELLE MESSTECHNIK GMBH [DE/DE];

[continued on next page]

As printed

(54) Title: METHOD FOR DETERMINING THE CO-ORDINATES OF A WORKPIECE

(54) Bezeichnung: BESTIMMUNG VON KOORDINATEN EINES WERKSTÜCKS



WO 2005/070567 A1 (57) Abstract: The invention relates to a method for determining the co-ordinates of a workpiece (9). According to said method: a first co-ordinate system, which has a fixed position in relation to the workpiece (9), is defined; first co-ordinates of the workpiece (9) are measured using a first co-ordinate measuring device (3); second co-ordinates of the workpiece (9) are measured using a second co-ordinate measuring device (5); and a common set of co-ordinates is generated from the first co-ordinates and the second co-ordinates in the first co-ordinate system or in a second co-ordinate system, which has a fixed position in relation to the workpiece (9). The method can be used in particular to determine co-ordinates of a plurality of workpieces (9) during and/or after the production and/or processing of the workpieces (9). The inventive method can also be applied if the workpiece (9) is displaced into a different position and/or orientation between the measuring operations carried out by the two co-ordinate measuring devices (3, 5).

(57) Zusammenfassung: Die Erfindung betrifft die Bestimmung von Koordinaten eines Werkstücks (9), wobei ein erstes Koordinatensystem festgelegt wird, das bezüglich dem Werkstück (9) fest positioniert ist, wobei erste Koordinaten des Werkstücks (9) unter Verwendung einer ersten Koordinatenmesseinrichtung (3) gemessen werden, wobei zweite Koordinaten des Werkstücks (9) unter Verwendung einer zweiten Koordinatenmesseinrichtung (5)

[continued on next page]

ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

- (84) **Designated states** (unless otherwise indicated, for every kind of regional protection available): ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

**Declaration under Rule 4.17:**

- of inventorship (Rule 4.17(iv)) for the following designation US

**Published:**

- with international search report.
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

*For an explanation of the two-letter codes and the other abbreviations, reference is made to the explanations ("Guidance Notes on Codes and Abbreviations") at the beginning of each regular edition of the PCT Gazette.*

gemessen werden, wobei aus den ersten Koordinaten und aus den zweiten Koordinaten ein gemeinsamer Satz Koordinaten in dem ersten Koordinatensystem oder in einem zweiten bezüglich dem Werkstück (9) fest positionierten Koordinatensystem erzeugt wird. Insbesondere können Koordinaten einer Vielzahl der Werkstücke (9) während und/oder nach einem Herstellungsprozess und/oder Bearbeitungsprozess der Werkstücke (9) bestimmt werden. Die Erfindung kann auch den Fall betreffen, dass das Werkstück (9) zwischen den Messungen mit den beiden Koordinatenmessenrichtungen (31, 35) in eine veränderte Position und/oder Lage gebracht wird.